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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,180	07/14/2006	Matthew P. Burdzy	LC-519/PCT/US	7258
31217	7590	09/23/2009	EXAMINER	
Loctite Corporation One Henkel Way Rocky Hill, CT 06067			MICALI, JOSEPH	
			ART UNIT	PAPER NUMBER
			1793	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,180	<b>Applicant(s)</b> BURDZY, MATTHEW P.	
	<b>Examiner</b> Joseph V. Micali	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11,14-19,21,22,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11,14-19,21,22,27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Status of Application***

The argumentation filed on August 24<sup>th</sup>, 2009 has been entered. Claims 1-2, 4-11, 14-19, 21-22, and 27-28 remain pending and presented for examination on the merits, as claims 3, 12-13, 20, and 23-26 have been cancelled.

### ***Previous Grounds of Rejection***

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1-2, 4-11, 17, 21-22, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,080,503 by Schmid et al, in view of U.S. Patent Pub. No. 2003/0199652 by Deviny et al.**

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With respect to claims 1 and 21-22, Schmid discloses an electrochemical cell and method of making the cell comprising a first electrochemical cell component 11, a second electrochemical cell component 12 and a methacrylate sealant 50 disposed between the two components (**Figures 3a and 5a**).

Schmid does not disclose providing a boron-containing initiator or of the specifics of the initiator and the methacrylate adhesive.

Deviny is drawn to methacrylate adhesives wherein a boron-containing initiator is provided to photocure the methacrylate adhesive. The sealant comprises both a methacrylate and a boron initiator (**paragraphs 0040-0041**).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schmid including use of a combined methacrylate and boron initiator, in view of the teaching of Deviny. The suggestion or motivation for doing so would have been to provide a sufficient means for curing and setting the adhesive resin between the flow plates of Schmid and thus effectively seal the fuel cell as desired by Schmid (**Deviny, paragraphs 0040-0041**). Further, one of ordinary skill in the art of using methacrylate sealants would have found the combination of a methacrylate with a boron initiator to have been an obvious combination for curing and setting the methacrylate adhesive and selection of any combination of materials for such purpose would have been readily apparent to one of ordinary skill in cured methacrylate adhesives.

With respect to claims 2 and 4-6, Schmid teaches the components 11 and 12 can be electrically conductive plastic (**column 1, lines 34-41**).

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With respect to claims 7-8, Schmid teaches the adhesive can be bonded to both cell components (**Figures 3a and 5a**) or can be bonded to only one of the surfaces (**Figures 3d**).

With respect to claims 9-10, Schmid teaches the components 11 and 12 are flow field plates (**Figures 3a and 5a**).

With respect to claim 11, Deviny teaches the sealant being either a mono-functional or poly-functional decomplexer (**paragraph 0017**).

With respect to claims 17 and 27, Deviny teaches the boron initiator is an organoborane amine complex in combination with a poly-functional aziridine (**paragraphs 0080- 0081**).

With respect to claim 28, Schmid teaches the electrochemical cell is a fuel cell (**column 1, lines 6-11**).

**4. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,080,503 by Schmid et al, in view of U.S. Patent Pub. No. 2003/0199652 by Deviny et al, as applied to claims 1-2, 4-11, 17, 21-22, and 27-28 above, and further in view of European Patent Pub. No. EP 1 201 722 A1 by Kneafsey et al.**

With respect to claims 14-16, Schmid and Deviny do not explicitly disclose the boron-containing initiator being an alkyl-borohydride.

Kneafsey discloses that the use of alkyl-borohydrides, as defined in claims 14-16, are known polymerizing initiators in adhesive methacrylate compositions (**abstract and paragraph 0030**).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schmid and Deviny including use of an alkyl-borohydride initiator, in

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view of the teaching of Kneafsey. The suggestion or motivation for doing so would have been to improve the bonding strength of the adhesive (**Kneafsey, abstract and paragraph 0030**).

**5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,080,503 by Schmid et al, in view of U.S. Patent Pub. No. 2003/0199652 by Deviny et al, as applied to claims 1-2, 4-11, 17, 21-22, and 27-28 above, and further in view of U.S. Patent Pub. No. 2004/0010099 by Kneafsey et al.**

With respect to claim 18, Schmid and Deviny do not explicitly disclose the boron-containing initiator being an organoborane in combination with a poly-functional aziridine.

Kneafsey discloses using an organoborane/polyaziridine complex initiator for adhesives which have the same structure as that defined in claim 18 (**abstract**).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schmid and Deviny including use of an organoborane/polyaziridine complex, in view of the teaching of Kneafsey. The suggestion or motivation for doing so would have been to improve the shearing and bonding strength of the adhesive (**Kneafsey, abstract**).

**6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,080,503 by Schmid et al, in view of U.S. Patent Pub. No. 2003/0199652 by Deviny et al, as applied to claims 1-2, 4-11, 17, 21-22, and 27-28 above, and further in view of U.S. Patent No. 6,806,330 by Sonnenschein et al.**

With respect to claim 19, Schmid and Deviny do not explicitly disclose the specific boron-containing initiator being currently claimed.

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Sonnenschein discloses that the use of trialkyl boranes or alkyl cycloalkyl boranes and an amine, as defined in claims 19, are known polymerizing initiators in adhesive methacrylate compositions (**abstract and column 4, line 4 – column 8, line 67**).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Schmid and Deviny including use of the currently claimed alkyl borohydride initiator, in view of the teaching of Sonnenschein. The suggestion or motivation for doing so would have been to improve the bonding strength of the adhesive (**Sonnenschein, abstract**).

#### *Response to Arguments*

**7. Applicant's arguments filed on August 24<sup>th</sup>, 2009 have been fully considered but they are not persuasive.**

With regards to applicant's argumentation against the combination of Schmid in view of Deviny, applicant argues (1) that the combination lacks predictability and reasonable expectation of success, (2) no motivation to combine, and (3) teaching away.

With regards to point (1), applicant's argumentation rests in the second and third paragraphs of pg. 12 (continuing on 13). Applicant describes the invention of Deviny (i.e. Deviny's boron initiators) and asserts that one of ordinary skill would not use such a teaching given that fuel cells are expensive and that one would strive to maximize the life of a fuel cell. Firstly, examiner maintains usage of Deviny, as applicant has failed to prove that (a) the reference does not read upon the breadth of the current claim language, (b) Deviny does not show the amines being sufficiently bonded to the decomplexer and thus able to poison a fuel cell (paragraph 0047), and (c) one having ordinary skill would not seek out such a reference, as

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applicant's argument of fuel cells being expensive and that one would want to maximize the life of a fuel cell is not convincing enough to negate the combination of Deviny with Schmid.

Applicant even admits that fuel cell seals are a known source of fuel cell contaminants; thus, one having ordinary skill in the art would be expecting such a result.

With regards to point (2), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the suggestion or motivation for doing so would have been to provide a sufficient means for curing and setting the adhesive resin between the flow plates of Schmid and thus effectively seal the fuel cell as desired by Schmid, and that further, one of ordinary skill in the art of using methacrylate sealants would have found the combination of a methacrylate with a boron initiator to have been an obvious combination for curing and setting the methacrylate adhesive and selection of any combination of materials for such purpose would have been readily apparent to one of ordinary skill in cured methacrylate adhesives.

With regards to point (3), "teaching away" is not an issue here, as "teaching away" is defined as a reference that suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. Essentially, "teaching away" does not work here, as the reference of Deviny is sufficiently aligned with the



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Schmid reference as well as the current invention and there is not an adequate amount of evidence to support the notion that the teaching of Deviny would not work with the invention of Schmid and of the applicant.

Essentially, the applicant's argumentation on the issue of Schmid in view of Deviny fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Examiner maintains the combination of Schmid with Deviny.

With regards to applicant's argumentation against the combination of Schmid and Deviny in view of Kneafsey (EP), applicant again argues (1) that the combination lacks predictability and reasonable expectation of success, (2) no motivation to combine, and (3) teaching away. However, applicant does not added any new grounds that haven't been address above, other than stating that Kneafsey teaches the use of metal alkyl borohydrides, which is not convincing argumentation.

With regards to applicant's argumentation against the combination of Schmid and Deviny in view of Kneafsey (US), applicant again argues (1) that the combination lacks predictability and reasonable expectation of success, (2) no motivation to combine, and (3) teaching away. However, applicant does not added any new grounds that haven't been address above, other than stating that Kneafsey teaches the use of complexed organoborane-polyaziridine initiators, which is not convincing argumentation.

With regards to applicant's argumentation against the combination of Schmid and Deviny in view of Sonnenschein, applicant again argues (1) that the combination lacks predictability and

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reasonable expectation of success, (2) no motivation to combine, and (3) teaching away.

However, applicant does not added any new grounds that haven't been address above, other than stating that Sonnenschein teaches the use of amine-organoborane complexes as polymerization initiators, which is not convincing argumentation.

Finally, examiner would like to make note of applicant's specification, specifically paragraph 0008. Applicant states that, "useful boron-containing initiators include alkyl borohydrides (such as metal and **ammonium** alkyl borohydrides), complexes of organoborane and **polyaziridine**, and complexes of trialkyl borane or alkyl cycloalkyl borane and **amine** compounds.

### ***Conclusion***

8. Claims 1-2, 4-11, 14-19, 21-22, and 27-28 are rejected.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph V. Micali whose telephone number is (571) 270-5906.

The examiner can normally be reached on Monday through Friday, 7:30am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry A. Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph V Micali/  
Examiner, Art Unit 1793

/J.A. LORENZO/  
Supervisory Patent Examiner, Art Unit  
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